GENERATOR

~~SECRET~~
CONFIDENTIAL 5 May 1958

MEMORANDUM FOR THE RECORD

SUBJECT: Visit to [redacted] on Portable Hydrogen Generator 25X1

1. On 29 April 1958 the undersigned met with [redacted] 25X1
[redacted] of 25X1
[redacted] for the purpose of re- 25X1
viewing progress on the portable hydrogen generator.

2. They had run five additional tests since the time of the last visit, two of which were reported on in the monthly report for March. The undersigned questioned them on the failure of some of the tests to correlate, especially with regard to generation time at various catalyst concentrations. [redacted] did not have any good reason for this 25X1
occurance; stating rather that the number of tests were too small to warrant any definite conclusions. On the other hand, [redacted] has been 25X1
selectively choosing those test results which did confirm their ideas on the theoretical behavior of the generator and here also the number of tests were small.

3. [redacted] had just completed three 1/10 scale runs with the generator at an initial pool temperature of 47°F at catalyst ($CoCl_2$) concentrations varying from 4.20 to 5.56 pounds. The tests were run with the generator floating in a tank of water (previous tests had all been run with the generator resting on the floor) and a significantly lower final temperature resulted due to dissapation of heat through the fabric to the surrounding water at a higher rate than on previous runs. The total generation time on these three runs varied from 34 to 59 minutes, the time varying inversely with the amount of catalyst used. 25X1

4. As pointed out during the last visit, the amount of catalyst required is substantially greater than was predicted at the end of Phase 1. If the 1/10 scale generation scales directly, the amount of catalyst required for the low temperature (47°F) generation will be about 20 times* predicted (i.e., 50 lbs. vs. 2.5 lbs.). It is the opinion of the undersigned, however, that the results will not scale directly and that a multiple of as much as 40 might be expected. This fails to take into account that the relative heat dissapation from the full scale generator will be less than in the 1/10 scale runs (simply from surface area considerations) and consequently the scaling up may not be as severe as the undersigned suggests.

5. In view of the heat dissapation experience of the generator when placed in the water, [redacted] believes that a higher borohydride concentration, which means a smaller "pool" could be tolerated in the full scale 25X1

DOC 41 REV DATE 12/4/80 BY 35277 SECRET
ORIG COMP 056 OPI 56 TYPE 02
ORIG CLASS S PAGES 2 REV CLASS C
JUST 1,2 NEXT REV 2010 AUTH: HR 70-2

* CORRECTION — ACCORDING TO CHART P. 77 IN PHASE I RPT., AMT. OF $CoCl_2$ NEEDED AT T = 47°F (8°C) IS 6 TIMES PREDICTED REQUIRED

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unit. To test out this hypothesis, however, would mean between 10 and 15 additional 1/10 and 1/5 scale tests which would cost about $12,000 more (not including the cost of the borohydride -- which would amount to about $5,000). Also, the full scale unit has already been ordered and a cancellation at this time would involve a forfeiture of a part of the price of the unit.

6. As it is, [redacted] does not have sufficient funds to finish the Phase II program as described and estimated that an additional $4500 will be required to allow them to complete it in a satisfactory manner. This $4500 estimate makes no allowance for possible rework of the generator for which contigency [redacted] would like to allow for by asking $1000 more. The undersigned has asked [redacted] to submit a $4500 extention proposal. 25X1 25X1 25X1

7. [redacted] plans to run three more 1/10 scale runs at 65°F at various catalyst concentrations during May. These will be followed up by two 1/5 scale runs, one at 47°F, the other at 65°F, in an effort to confirm the 1/10 scale test experience. 25X1

[redacted] 25X1

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